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Masters of the ‘masters of the universe’?

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Abstract

The rise of central bankers to the status of new ‘masters of the universe’ has been matched by mounting allegations of political overreach. In the Eurozone, for instance, the ECB has increasingly been accused of straying into the fiscal realm. Why do politically independent central banks engage intensely and publicly with government policies, thereby threatening the neat separation between monetary and fiscal policy that was meant to protect central banks themselves from interference? While existing political economy accounts have focused squarely on the issues of government debt and central bankers' fears of fiscal dominance, we argue for the emerging role of ‘financial dominance’ throughout the crisis, thereby shedding light on the structural forces that master the new masters of the universe. To this end, we pursue a mixed-methods approach, combining quantitative text analysis techniques with a qualitative understanding of the context in which central banks communicate on fiscal policy.

SER keywords: financial markets, financial crisis, political economy, government, strategic interactions

JEL classification: E58 central banks and their policies, G28 government policy and regulation, P16 political economy

[I]ndependence from the rest of the government (...) is certainly the concept of independence on which both the academic literature and the Maastricht Treaty focus. (...) But there is another type of independence that, while just as important, is rarely discussed: independence from the financial markets.

– Alan Blinder (1998, pp. 59-60)

1. Introduction

Over the past crisis-stricken decade, central bankers' newly-recognised powers as financial stabilisers of last resort and their forays beyond conventional forms of monetary policy-making have been met with mounting accusations of political meddling. The Bank of England, for instance, recently found itself in the limelight when its governor warned of financial instability and other risks surrounding the UK's departure from the European Union, prompting a backlash from parliamentarians in the Treasury Select Committee. The Eurozone, in turn, has come to be seen as one of the most contested cases of alleged overreach: during the currency bloc's protracted crisis, the ECB sought to influence member states' economic policy-making by formulating fiscal preferences in press conference statements and public speeches, addressing confidential letters with detailed policy prescriptions to Eurozone governments, and designing the settings of its unconventional monetary policies with a view to their impact on governments' fiscal behaviour (Cour-Thimann and Winkler, 2012, p. 779; Lombardi and Moschella, 2016; Henning, 2016; Woodruff, 2016).

Such interventions went alongside the ECB's role as member of the ‘troika’, through which it played a significant part in designing fiscal conditionality for countries under a macroeconomic adjustment programme. However, many of the ECB's fiscal engagements were not limited to programme countries and were often directed towards Eurozone governments more broadly. This points to a puzzle. If central bank independence is understood as the divorce between monetary and fiscal policy, and if the ECB is more divorced from fiscal authorities than any other central bank in the world, why did the divorce come to be overthrown in the Eurozone of all places? What is it that makes a singularly independent central bank reach out to, and seek co-habitation with, fiscal policy-makers? In a nutshell: why did the ECB engage so intensely and publicly with fiscal policy, despite conventional wisdom suggesting that this would threaten its treasured institutional independence?

The commonplace way of thinking about central bank independence (CBI) is to characterise it as the degree to which monetary authorities (central banks) are protected from interference by fiscal authorities (governments). The often-invoked rationale behind the need for protection is that governments cannot credibly commit to keeping inflation low due to electoral and other dynamics (Kydland and Prescott, 1977; Barro and Gordon, 1983) and that unsustainable fiscal policies pose a pertinent threat of dominating the sound policy-making of central banks (Sargent and Wallace, 1981). The established solution to this problem of interference has been to separate monetary from fiscal policy-making, i.e. to depoliticise the conduct of monetary policy by delegating it to a politically independent central bank. Most observers agree that this kind of institutional 'divorce' (Goodhart, 1998, p. 410) has been perfected in the European Economic and Monetary Union (EMU) and that the European Central Bank (ECB) is the most independent among the world's major central banks. A moot point in this story, however, is whether the principle of non-interference cuts both ways. Does the protection from government intervention imply that central banks, for their part, refrain from interfering with government policies? Or do central banks seek to interfere with fiscal and other economic policies and thereby jeopardise the separation between monetary and fiscal policy-making that was meant to protect themselves from interference?

That politics can have a bearing on monetary policy is well-established in the political economy literature (see Frieden, 1994; Cukierman and Webb, 1995). However, as Morrison (2015, p. 243) suggests, only lately and more partially have we begun to consider the reverse as well, namely ‘evidence of central bankers manipulating politics’. This paper makes a novel attempt at filling this void. Much of the existing scholarship on central bank-government interactions has relied, explicitly or implicitly, on a model that emphasises government debt developments and fears of fiscal dominance to account for central bankers' excursions into fiscal and other economic policies (Sargent and Wallace, 1981; Mishkin, 2012; Walsh, 2012), not least in the case of the ECB throughout the crisis (Allard *et al.*, 2013; Yiangou *et al.*, 2013; Bodea and Higashijima, 2017). In contrast, we draw on the idea of ‘financial dominance’ to explain central banks' increased fiscal policy concerns. Highlighting the case of the Eurozone and its wider ramifications, we argue that extraordinary actions undertaken by the ECB to limit financial instability and the absence of collective fiscal instruments pushed the central bank to call upon governments to mitigate the increasing financial risks associated with its balance sheet interventions.

This challenges and qualifies existing political economy accounts of the financial crisis and its management by major central banks. While some have highlighted the collective responsibility of bankers for the North-Atlantic predicament – appearing to be ‘masters of the universe’, yet turning out to be ‘slaves of the market’ (Bell and Hindmoor, 2015) –, the verdict on central banks has been that these acted ‘autonomous[ly] from’ those markets (Nelson and Katzenstein, 2014, pp. 381-383) and ultimately managed to contain the worst of calamities. In a sense, central bankers thus came to be revered as the new masters of the universe themselves, earning the title when rescuing its previous holders – together with much of the developed world – from collective financial meltdown (Irwin, 2013; Sentance, 2015). Yet, what if central banks turned out to be ‘slaves of the market’ as well, in some way or another? I.e., what if central bankers were not all that autonomous from, but equally dominated by, financial market concerns? It is this wider question – the question of who or what ‘masters the masters’ of our political-economic universe – that a study of financial dominance can help illuminate.

2. Methods, approach and contribution

Our analysis proceeds in three steps. After spelling out the theoretical expectations of fiscal and financial dominance, we first create a novel indicator of ECB fiscal engagement from the start of Jean-Claude Trichet's presidency until the beginning of 2016 on the basis of official ECB communication transcripts (namely a total of 1,097 speeches, press conferences and hearings before the European Parliament). For this purpose, we rely on an unsupervised quantitative text analysis technique, topic modelling, that allows us to extract distinct latent topics from our dataset. We then identify a 'fiscal policy' topic among these different topics and track its intensity and variation over time. Lastly, we perform a qualitative discussion of documents within our dataset as well as supplementary sources, highlighting several episodes of Eurozone crisis policy-making that provide a context for the ECB's discourse. Our study thus stands in line with recent mixed-method scholarship on central bank deliberation that aims at combining quantitative (text) analyses with more qualitative approaches in order to increase the robustness of results (Schonhardt-Bailey, 2013; Collignon and Diessner, 2016; Fligstein *et al.*, 2017).

While the economics literature that deals with the determinants and effects of central bank communication is well-established, and growing,[1] political economists have started to pick up on the subject only more recently (Hall, 2008; Braun, 2016). Our analysis contributes to these established and nascent debates in at least three ways. First, our work speaks to a growing literature that examines the drivers of central bankers' policy preferences (Adolph, 2013; Lombardi and Moschella, 2016) as well as evolving discussions around central bank independence and the politics of monetary policy in a world of financial instability (Fernandez-Albertos, 2015; Dietsch *et al.*, 2018). Second, we shed new light on a particular aspect of central banks' management of the global financial crisis and the protracted Eurozone crisis (De Grauwe and Ji, 2015), namely the striking engagement with fiscal policy issues (Allard *et al.*, 2013; Gabor, 2014). Lastly, we make both a methodological and an empirical contribution to political economy approaches to the crisis, and to studies of policy-makers' 'communicative discourse' more generally (Schmidt, 2016), by way of applying topic modelling techniques to official documents of the ECB. While topic modelling has enjoyed growing interest both in political science and, more recently, in economics (Hansen *et al.*, 2018), applications in political economy and economic sociology remain very few and far between (Fligstein *et al.*, 2017). In combining this text analysis approach with a qualitative assessment of Eurozone monetary policy-makers' revealed preferences, we propose an innovative way towards studying the drivers of central bankers' engagement with the sensitive subject of government policy.

Before proceeding, however, a word of caution is in order. In particular, our quantitative-*cum*-qualitative text analysis approach raises the question whether central bank communication can be taken as an indication of central bankers' actual policy concerns. We assume this to be the case and consider it a reasonable assumption: monetary policy-makers have strong incentives to express actual policy concerns in their communication as part of their 'expectation management', i.e. to enable a variety of audiences to understand and anticipate their reasoning (Lohmann, 2003). The almost instantaneous impact of ECB announcements bears testimony to this, with market participants reacting to ECB statements as if these constituted an actual implementation of policy, especially in times of crisis (Brand *et al.*, 2010; Altavilla *et al.*, 2014). We would therefore find it unlikely that ECB officials engage with the salient topic of fiscal policy in public unless this is relevant for their decision-making process. The implications of our analysis for a political economy of central bank independence post-crisis, both within and beyond the Eurozone, are discussed in the concluding section.

3. Monetary, fiscal and financial dominance

To make sense of the delicate separation between monetary and fiscal policy-making, and the reasons for which a central bank might seek to interfere with government policies, we can distinguish two approaches: a conventional view of CBI, modelled as a struggle for dominance between monetary and fiscal authorities, and a nascent approach that pays increased attention to how financial markets and concerns for financial stability have a bearing on the relationship between these two. The first is firmly rooted in the time inconsistency literature (Kydland and Prescott, 1977; Barro and Gordon, 1983) and subsequent New Keynesian applications thereof. According to these, fiscal policy-making is constantly at risk of spilling over into, and ultimately undermining, the inflation-fighting efforts of independent central banks, rendering a separation of the two indispensable. In the worst case, a situation of fiscal dominance could develop, in which government debt grows uncontrollably and thus either ends up in sovereign default or in outright monetary financing by the central bank, both of which ultimately undermine price stability. In the words of Mishkin (2012, p. 35), fiscal dominance inevitably ‘puts a central bank between a rock and a hard place’, up to a point where central bank independence simply becomes ‘meaningless’ (Walsh, 2012, p. 19). The upshot of this line of reasoning is that the essence of a central bank's independence is the degree of its separation from fiscal authorities: the more a central bank is shielded from activism and interference on behalf of fiscal policy-makers, the more independent it is.

A notable underlying assumption of this view is that a government's fiscal policies are exogenous to the central bank which, as a disinterested technocratic institution, is merely concerned with its own monetary policy-making (cf. Fernandez-Albertos, 2015, pp. 226-227). One may wonder, however, to what extent this proposition is in need of qualification. In case a central bank's autonomy and capacity to act were uniquely threatened by another actor's behaviour, would the bank simply sit idle – as exogeneity implies – or would it seek to have an impact on that behaviour in some way or another? Allowing for some degree of endogeneity paints a different picture of the relationship between fiscal and monetary authorities: instead of taking fiscal dominance as a given, their interactions become a constant struggle for dominance over one another.

In such 'games of chicken' between the monetary and the fiscal authority (Sargent and Wallace, 1981), one of the mechanisms through which a central bank can interfere with government policy-making is its setting of the official interest rate: in essence, the bank may counter government debts and deficits that it deems 'excessive' by raising its main policy rates, thus affecting the fiscal authority's borrowing costs, bringing inflation down and, in consequence, exerting pressure on government finances (Canzoneri *et al.*, 2002, p. 373; Hughes-Hallett and Lewis, 2015; Bodea and Higashijima, 2017). What's more, the bank may merely communicate its *intention* to tighten monetary policy in the face of rising deficits and debt – thereby sending a strong signal to the government that is rendered credible through financial markets' expectations and reactions (Krippner, 2007; Bodea, 2013, pp. 84-85). In the more constructivist terminology of Hall (2008, p. 223), central banks can thus make use of their 'deontic power' in order to 'influence government fiscal policy through advice, and (...) public judgment pronouncements'.

To be sure, the conventional justification for central bank independence has been far from uncontested in the political economy literature (McNamara, 2002; Grabel, 2003; Lockwood, 2016). While proponents of the time-inconsistency view suggest that delegation of monetary policy to independent central banks ultimately heralds low inflation (Alesina and Summers, 1993), early sceptics have argued that any correlation between the two is more likely to be driven by a set of underlying political and institutional factors (Posen, 1993). In this vein, even supposedly 'depoliticised' monetary policy decisions have to be seen as 'inescapably' political (Kirshner, 2003), given that prioritising low inflation over full employment or output stabilization constitutes a fundamental political trade-off (Bernhard *et al.*, 2003, p. 706). What both time-inconsistency scholars and their critics arguably have in common, however, is a focus on conventional forms of monetary policy-making and a concomitant neglect of the financial system dynamics that ultimately condition the successful transmission of central bank policies. Indeed, the prospect of a systemic financial crisis – and central banks' subsequent experimentation with a range of unorthodox monetary policy tools – has arguably been as unanticipated by critical political economy scholarship as it has been by mainstream macroeconomics (see Cohen, 2009; Katzenstein and Nelson, 2013).

In contrast, we build on nascent post-crisis accounts of central banking and depart from the received wisdom of central bank independence being exclusively a matter of monetary-fiscal divorce. In particular, financial stability concerns are slowly but increasingly being recognised as an intermediary force in the struggle for dominance between fiscal and monetary authorities, adding what one may call a dimension of 'financial dominance' to the original set-up (Hannoun, 2012).[2]The idea of financial dominance builds on the observation that systemically relevant financial institutions may be strategically weak, i.e. they may refuse or be unable to match the losses they have incurred with increases in their equity positions (Hellwig, 2014). This 'power of inaction' (Woll, 2014), namely to recapitalise oneself, forces the hand of the public sector which will have to step in and provide for recapitalisation if it is keen to avoid a systemic financial crisis.

In terms of the relationship between monetary and fiscal authorities, this introduces the problem of whether the government absorbs the losses accrued in the financial sector (through explicit bailouts that increase the public deficit) or whether the central bank does so (by supplying banks with extensive credit that allows for implicit or 'stealth' recapitalization) (Leeper and Nason, 2015, pp. 45-46; Brunnermeier, 2015, p. 18). In addition, financial dominance may not only stem from lending direct support to financial institutions in the traditional banking sector, but also from injecting liquidity via shadow banking and repo markets, thus compelling central banks to provide 'asymmetric support for falling asset prices' (Gabor, 2016; Hannoun, 2012, pp. 9-11). On the whole, this tripartite set-up has implications for our study in that it adds a financial stability dimension to central bank independence that has arguably been omitted in the established CBI literature. We now turn to how these considerations bear on the puzzling case of ECB fiscal engagement.

4. The case of the Eurozone

The Eurozone provides an intriguing case of CBI. Hardly anyone denies that EMU's central bank, the supranational ECB, embodies the most independent monetary authority in the developed world. Besides scoring high on conventional indicators of CBI – such as ascribing overriding priority to the objective of price stability while remaining vague about the relative weight of other objectives (De Grauwe, 2016) –, the crucial difference between EMU and other currency areas lies in the nature of the Eurozone's monetary-fiscal divorce, which is not merely horizontal, but also vertical: there simply is no supranational fiscal authority that the ECB could be separated or independent from. After its creation, observers thus found that 'something ha[d] been lost' in terms of monetary-fiscal policy coordination in EMU, and further hypothesised that 'the fear (...) of a threat to the independence' of the Eurozone's institutions would uphold this separation 'for some time to come' (Bini Smaghi and Casini 2000, pp. 375, 388; Buiter 1999, p. 204). This reasoning resonates with practitioners and scholars of central banking to this day. In the words of Lucrezia Reichlin, for instance, '[y]ou should be careful about talking beyond policy, if you want to retain independence' (quoted in Giugliano, 2015). How come, then, that the ECB engaged intensely and publicly with fiscal issues in the Eurozone, thereby ostensibly threatening the monetary-fiscal divorce that was meant to protect its very independence?

.A conventional understanding of central bank independence would stress the inextricable links between fiscal policy outcomes and the inflation-fighting efforts of central banks: if government debt grows unsustainably, a central bank's ability to control inflation will eventually be eroded. It follows that monetary authorities should have a natural interest in avoiding this kind of domination by fiscal authorities, which is why they might openly propagate fiscal discipline. Recent studies by

Yiangou *et al.* (2013, pp. 230-231), Allard *et al.* (2013, pp. 2-3), Lombardi and Moschella (2016, p. 856) and Bodea and Higashijima (2017, pp. 47-51) explicitly or implicitly subscribe to this view when it comes to explaining the behaviour of the ECB during the crisis. In line with this logic, the primary driver for why the ECB engages with fiscal policy should be its exposure to Eurozone government debt developments.

Besides, a financial dominance perspective would emphasise the monetary authority's entanglement with the financial sector, as reflected not least in the size and composition of a central bank's balance sheet. While balance sheet sizes grew across major economies during the crisis, striking differences could be discerned in terms of their composition. Importantly, the increase in size of the ECB's balance sheet until 2015 was mainly driven by providing more credit to Eurozone banks, while other central banks relied more heavily on purchases of government bonds (as in the UK or US) and private sector assets (as in the US) (Hall and Reis, 2015). In consequence, the ECB effectively 'outsource[d] the task of financial stability to commercial banks' (Gabor 2014, p. 200), owing to what is often perceived as a heavily bank-based Eurozone financial system (Cour-Thimann and Winkler, 2012).[3] In providing such credit easing for the financial sector, some argue that the ECB assumed unprecedented levels of credit risk without being able to rely on insurance against potential balance sheet losses (Gros, 2012).

One proposed way to insure against nominal losses would be for fiscal authorities to provide a backstop for the central bank's operations (Leeper and Nason, 2015) or, more generally, to mitigate risks by means of regulating, supervising and recapitalising banking systems as well as creating fiscal space through fiscal and structural reform (Henning, 2016, p. 185). Consequently, the reason for which an independent central bank may reach out to fiscal policy-makers is to make sure that there is adequate fiscal support for its monetary policies if need be. A financial dominance view of the Eurozone would therefore suggest that the ECB's interference with fiscal policy-making is not only driven by its exposure to government debt, but also by the state of credit risk on its balance sheet.

5. Measuring ECB fiscal communication

Although we are not the first to carry out some form of quantitative text analysis on (European) central bank documents,[4] an important methodological challenge for us is to derive a meaningful indicator of fiscal engagement by the ECB over the period considered. One possibility would be to perform simple counts of words or sentences pertaining to fiscal policy in selected central bank communications (an approach that is sometimes pursued by means of so-called dictionary techniques). This strategy was employed by Golub *et al.* (2015) who count words in Federal Reserve FOMC meeting transcripts, and Allard *et al.* (2013) who count words and sentences in ECB press conference statements, respectively. The latter provide the only study of ECB fiscal communication that we are aware of to date, finding the central bank's fiscal concerns to have peaked around 2004. However, the analysis only extends to the early years of the Eurozone crisis (namely to the end of 2011, thus omitting much of the ECB's extensive crisis management in the subsequent years) and draws on a fairly limited number of communication documents. One of the drawbacks of simple counts is that these require the researcher to subjectively predetermine a list of terms that relate to a particular policy area, thus leaving room for selection bias.

We address this by employing Latent Dirichlet Allocation (LDA) (Blei *et al.*, 2003), a class of topic models, to derive a consistent indicator of ECB engagement with fiscal policy from our corpus. Topic models are statistical algorithms that seek to recover the underlying meaning of a text starting from the observed word use in the documents.[5] In terms of our study, making use of LDA provides us with two types of output. First, it generates a list of the likely vocabulary for each of the obtained topics. This makes it possible for us to interpret and label the topics. Second, it reveals the probabilities of documents being about a given topic. We can use these probabilities to trace the prevalence (i.e. intensity) of topics as well as their variation throughout the sample. Hence, the aim of our LDA analysis is to identify a 'fiscal policy' topic among the topics generated from all documents, and then to establish how its intensity has varied over time.

We apply LDA to a dataset that consists of the introductory statements to ECB press conferences, introductory remarks during ECB policy-makers' appearances before the European Parliament (EP) as well as individual speeches delivered by ECB executive board members, in the period from November 2003 (the start of Jean-Claude Trichet's presidency) until the end of 2015.[6] We exclude the Q&A sections of press conferences and appearances before the EP as we are primarily interested in the way the central bank describes and explains, in its own words and not conditioned by other participants' questions or interjections, the positions and reasoning of the governing council on different topics and especially on fiscal policy. In the same vein, we restrict the dataset to speeches by executive board members – as opposed to national central bank governors on the ECB's governing council – in order to limit the potential effects of 'national bias' that could stem from delivering different speeches to different national audiences (Bennani and Neuenkirch, 2014, p. 15). In total, this amounts to a corpus of 1,097 documents (887 speeches, 139 press conferences and 71 addresses to the EP), thus constituting a sample large enough to allow some meaningful inference and that reflects the main universe of the ECB's official communication.[7]

5.1 Quantitative text analysis

Table 1 presents the topic contents for ten out of 25 topics obtained through our LDA algorithm, displaying the ten most prominent terms per topic in stemmed form (the full table is provided in the online appendix). In a number of cases, the interpretation and labelling of the topic is relatively uncomplicated. Topic number 6, for instance, shows a high probability for stemmed terms such as *bank*, *resolut*, *singl* and *supervis* and can therefore be taken to relate to the EU banking union (with its single supervisory and resolution mechanisms). The terms *payment*, *sepa*, and *card* in Topic 10 seem to refer to payment services, while Topic 9 (containing *european*, *europ*, *union*, *institut*, *member* and *state*) could be labelled European Union, and so forth. Most importantly for our analysis, Topic 8 exhibits a high probability for terms such as *fiscal*, *govern*, *debt*, *deficit* and *fiscal_polici*, which directly reflect fiscal concerns. We thus draw on this topic as our indicator of engagement with fiscal policy in the ECB's official communication.[8]

Table 1: ECB communication topics, 2004-2015 (first ten topics of LDA analysis with 25 topics)

In addition to providing topic contents, LDA enables us to track the intensity of different topics over time, as reflected in the probabilities of documents being about a given topic. To this end, we calculate monthly averages of the estimated topic proportions, yielding 146 monthly observations. In Figure 1 below we report these averages for two benchmark topics relating to regulation (Topic 1) and inflation developments (Topic 3), respectively. Despite some minor variation in intensity, the proportions for these two topics appear to have remained relatively stable during the period under consideration.

Figure 1: Intensity of ECB communication on benchmark topics, 2004-2015

(LDA monthly topic proportions for regulation and inflation developments topics)

In contrast, Figure 2 depicts the intensity of the identified fiscal policy topic. As mere eyeballing suggests, there has been a noticeable variation in intensity over time, including a striking increase between 2010 and 2013. We shall therefore now zoom into different episodes throughout the sample, in order to shed light on the political-economic context of the ECB's engagement with fiscal policy issues.

Figure 2: Intensity of ECB communication on fiscal policy, 2004-2015

(LDA monthly topic proportions for fiscal policy topic)

6. Fiscal orthodoxy meets fears of financial dominance

Our LDA analysis suggests that we can broadly differentiate between three distinct periods of ECB communication on fiscal policy. First, an extended phase of low fiscal communication until about 2010, with fiscal policy accounting for an average of around 2.2% of official communication only (despite notable spikes in intensity in 2004 and 2005). Second, a period of considerably more intense fiscal communication from early-2010 until early-2014, during which the overall topic proportion averaged around 6.5% and exceeded 10% in more than ten separate months, thus ranging well above the 3.8% average registered for the full sample. And third, an episode of again lower intensity from 2014 until 2016, which saw communication on fiscal issues ebb down to around 2.5% on average.

The first period confirms earlier research indicating that the ECB's pre-crisis involvement in fiscal policy peaked around 2004 (Allard *et al.*, 2013, pp. 5-7). This can presumably be attributed to the central bank engaging publicly in controversial discussions about the suspension and reform of the fiscal rules stipulated in the stability and growth pact (SGP), as is well-documented in the literature (Howarth & Loedel, 2004; Matthijs & Blyth, 2018). The period that stands out the most according to our LDA analysis, however, is the second, during which the ECB's engagement with fiscal policy reached unprecedented heights. How may we account for this? We argue that the ECB's varying fiscal concerns were not merely linked to the commonly held perception that it propagated the orthodoxy of fiscal consolidation, but also had their roots in pertinent and discernible financial dominance concerns.

6.1 Orthodox business as usual?

The earlier increases in fiscal communication from 2010 onwards are conventionally attributed to the central bank promoting fiscal austerity in light of rising public deficits, thereby mirroring traditional fears of fiscal dominance. Indeed, the ECB under former president Trichet soon came to be seen as one of the principal spokespeople for austerity in the Eurozone (Blyth, 2013, pp. 60-61; Ban, 2016, pp. 196-197), as reflected not least in a much-debated op-ed in the *Financial Times* in June 2010 (Trichet, 2010a) as well as repeated addresses to the European Parliament urging to 'accelerate fiscal consolidation' and to introduce 'quasi-automatic' sanctions against fiscal indiscipline (Trichet, 2010b). During this time, the central bank also developed and launched its first bond-buying scheme, the Securities Markets Programme (SMP), which was accompanied by a peculiar form of non-public fiscal communication: the now-notorious 'secret' letters addressed to different Eurozone heads of government.

In November 2010 and August 2011, respectively, Trichet signed off letters first to Ireland's finance minster Brian Lenihan and then to Italian and Spanish heads of government Silvio Berlusconi and Luis Zapatero, calling for the adoption of reforms as well as 'bold measures to ensuring the sustainability of public finances' (ECB, 2014a; ECB, 2014b). This has fuelled speculation about whether the bank purposefully employed its bond-purchasing powers as a mechanism through which to discipline distressed Eurozone governments, withholding purchases when it considered reform and consolidation efforts to be unsatisfactory (Whelan, 2011). While there are difficulties with substantiating this view – given that data on ECB bond purchases are not available on a country-by-country basis and have only been published as weekly totals –, changes in these totals throughout 2011 have nonetheless been interpreted as lending support to the claim (Woodruff, 2016: 100-101). More substantively, the episode underlines how the ECB's communication towards Eurozone fiscal policy-makers is not merely ‘cheap talk’, but can indeed be linked to strategic monetary policy concerns and actions (Henning, 2016).

President Trichet's successor Mario Draghi did not break with this line either, launching several calls for a strengthening of EMU's institutions of fiscal surveillance. For instance, in what were some of his first public appearances at the helm of the ECB, the new president consistently promoted the introduction of a ‘new Fiscal Compact’ in the EU (Schelkle, 2014, p. 112): such pleas were made to European Parliamentarians and the German policy establishment alike, and also featured prominently in Draghi's second press conference statement after the December 2011 governing council meeting (Draghi, 2011a; 2011b; 2011c). In March 2012, EU governments did come around to creating a new fiscal compact, as part of the Treaty on Stability, Coordination and Governance (TSCG). Importantly, the agreement on the TSCG enabled the ECB to very publicly attach fiscal conditionality to its unconventional monetary policy measures (by making interventions conditional on signing up for a macroeconomic assistance programme, which in turn was conditional on signing and implementing the TSCG) (Henning, 2016). This was precisely the case for the ECB's famed outright monetary transactions (OMT) in September 2012, for which the central bank made sure to stress that these came with ‘strict and effective conditionality’ as a quid pro quo for any future interventions (ECB, 2012; Diessner, 2017).

6.2 The role of financial dominance concerns

At the same time, however, an often de-emphasised aspect of the ECB's story throughout the Eurozone crisis was its desire to protect itself from credit risks that came with increasingly unconventional monetary policies. This found its expression in repeated urges to Eurozone governments to employ fiscal resources – such as the newly-created bailout funds of the EFSF and later the ESM –, to limit banks' reliance on ECB liquidity (Trichet, 2011; Draghi, 2012). That reliance primarily stemmed from the ECB's large-scale lending through its two long-term refinancing operations (LTROs) of December 2011 and February 2012. The LTROs offered 3-year financing to Eurozone banks at a mere 1.0% of interest, together with a significant easing of collateral requirements, thereby fuelling a hitherto unprecedented increase in the size of the Eurosystem's balance sheet by EUR1 trillion.[9] The operations were widely perceived to be an indirect government bond-buying programme, as was insinuated even on the level of Eurozone heads of state (Krishnamurthy *et al.*, 2017, p. 11). Crucially, however, the LTROs also allowed for an implicit or 'stealth' recapitalisation of distressed financial institutions through the ECB's balance sheet, after national governments persistently refused or found themselves unable to recapitalise ailing banking systems (Schelkle, 2014, pp. 112-113).

In a series of communication acts in short succession during the first half of 2012, the ECB called upon governments to put an end to this situation of financial dominance, urging for the use of collective fiscal resources instead of the central bank's unconventional policies to shore up financial stability – thus 'publicly request[ing] radical change' in the EU's institutional framework (De Rynck, 2016, p. 129). Interventions by executive board member Benoit Coeuré, for instance, were among the very first to endorse '[p]ooling resources in a single pan-EU resolution fund' (2012a) and to submit that the intergovernmental European Stability Mechanism 'inject capital directly into banks' (2012b). Chief economist Peter Praet, in turn, was particularly vocal in stressing that 'the problems of public finances and financial stability are closely intertwined' and that the central bank shall therefore be 'especially vigilant to shield monetary policy from attempts to engross it into inappropriate financial stability tasks' (2012a), instead pleading to 'intensify ongoing work on the establishment of a mechanism for the resolution of bank failures at the European level' (2012b). These calls were accompanied by president Draghi's (2012) first endorsement of a pan-European bank supervision and resolution scheme in front of the European Parliament, on the grounds that 'all non-standard measures are temporary in nature' and that the central bank's 'liquidity support cannot substitute for capital or for sound fiscal and structural policies'.

To some observers, it was the inclusion of such a recapitalisation mechanism in the June 2012 European Council announcement to establish a banking union that proved to be the 'game changer' for the ECB and ultimately induced the central bank to announce the OMT programme (Véron, 2015, p. 18). In this vein, Europe's banking union neatly exemplifies the proposition of financial dominance as a relevant driver behind the ECB's fiscal policy concerns: throughout the crisis, European central bankers publicly, and repeatedly, urged Eurozone governments to pool fiscal resources in order to tackle problems in the banking sector and attenuate financial markets' apparent overreliance on ECB liquidity. Once such a commitment was finally made, and further specified in the December 2012 European Council declaration, the ECB slowly but steadily reduced its calls for action on behalf of fiscal policy-makers. At a February 2014 event marking the 20th anniversary of the establishment of the European Monetary Institute (i.e., the forerunner of the ECB), Draghi singled out the banking union's Bank Recovery and Resolution Directive as 'the key innovation' paving the way for a Eurozone-wide approach to banking resolution (Draghi, 2014), complemented shortly afterwards by the adoption of the Single Resolution Mechanism Regulation.

6.3 A stark decrease in fiscal communication

The ECB's fiscal communication ebbed down noticeably from early-2014 onwards. Given our previous considerations about the central bank's aversion towards bearing risks on its balance sheet in the context of unconventional monetary policy, it is remarkable that its subsequent major policy interventions, most notably the Public Sector Purchase Programme launched in January 2015 (i.e. the Eurozone's variant of quantitative easing), have not entailed anything close to the levels of fiscal communication we have observed before. In other words, at a time when the central bank did start to hold unprecedented quantities of sovereign bonds (which quadrupled over the course of 2015 and thus dwarfed its previous holdings),[10] implying an unprecedented exposure to Eurozone sovereign debt, its fiscal communication remained, in fact, conspicuously muted. We would find this hard to reconcile with the traditional proposition of fiscal dominance and its emphasis on central bankers' perennial preoccupation with backstopping unsustainable government debt developments.

Instead, we consider the notion of financial dominance to be more plausible here, as suggested not least by pertinent changes in the composition of the Eurosystem's balance sheet: while holdings of sovereign bonds and other securities indeed almost doubled between 2013 and 2015 (from around €586bn to around €1.16tn), lending to euro area credit institutions all but halved over the same period (from €1.126tn to €559bn). Accordingly – and once the ECB gained the impression that Eurozone governments had finally agreed to engage in the kind of institution-building that would effectively share the burden of financial stabilization (most notably through the development of the banking union and its single resolution mechanism) – the central bank increasingly toned down its calls upon fiscal policy-makers to limit the financial sector's apparent overreliance on its balance sheet.

One objection that may be raised against this line of argument is the problem whether a clear demarcation between issues of fiscal and financial dominance is possible in a situation that is characterised by substantial entanglements between governments and financial institutions. Such interdependencies have come to be labelled as an omnipresent bank-sovereign nexus in the Eurozone (or, in more emphatic terms, as a vicious circle, 'doom loop' or 'deadly embrace' between governments and banks), and were the ostentatious reason for setting up the European banking union in the first place (Schäfer, 2016). This has led to suggestions of financial dominance being not more than 'hidden fiscal dominance' and rendering a distinction between the two 'moot' (Hellwig, 2014, pp. 26-27). However, while both forms of dominance can indeed be congruent and might at times overlap, we deem it pertinent to stress the notion of financial dominance in its own right, for three main reasons.

First, and in line with Gabor (2016), while financial dominance 'can easily be mistaken for' its fiscal counterpart, it 'does not mark a full return' to it, for it finds its expression not only in outright support for particular 'banking *institutions*', which may or may not be intertwined with the sovereign of the jurisdiction they operate in, but also in 'supporting liquidity in (...) *markets* in times of stress' more broadly (2016, pp. 971, 991, emphasis in original; Dietsch *et al.*, 2018). Second, and related, empirical research – including by the ECB itself – does suggest that banking and financial crises are, in fact, the indicators that lead to sovereign debt crises more often than the other way round (Babecky *et al.*, 2012). And third, even if we submitted that the existence of a bank-sovereign nexus meant that it should not matter *economically* whether the 'original sin' of triggering a crisis is committed in the financial sector and then spills over into sovereign debt markets, or vice versa, it might well make a difference politically. The prolonged political quarrels over organizing so-called rescue packages for troubled sovereigns in the Eurozone, as opposed to the relatively less visible or even 'stealth' recapitalisation of national banking sectors, testify to this.

7. Conclusion

We started from the puzzle of why a uniquely independent monetary authority like the ECB would engage intensively with fiscal policy-making and thus jeopardise the monetary-fiscal divorce that was supposed to be all to the benefit of the central bank. To resolve the puzzle, we have highlighted the independent and growing role of financial dominance concerns over traditionally expected fears of fiscal dominance. This yields several implications. A key suggestion that emerges from our distinction between different forms of dominance is the desired course of government action that each can be taken to imply. A prevalent understanding of central bank independence suggests that the principal rationale for resorting to fiscal interventions is to make sure that the monetary-fiscal divorce is ultimately reinstated and upheld: the reason why a central bank reaches out to governments is that it does not want fiscal activism to undermine its monetary policy-making. Our analysis, however, implies that in a world of financial instability, additional concerns to such threats of fiscal dominance come to play. In particular, governments' unwillingness or inability to stabilise financial markets can mean that the central bank will ultimately be forced to step in and expose itself to new levels of risk, best characterised as a situation of financial dominance. Viewed in this light, a central bank's interference with fiscal policy-making is not so much an indication of governments' fiscal activism, but rather of their harmful *in*action.

To take our argument further, future research may contend that this insight holds up even during the subsequent, non-crisis times of monetary policy normalization: not only when it comes to providing financial stability, but also when trying to fulfil their core policy mandates of achieving stable low inflation, do central bankers increasingly seem to be out of their depth and in need of some form of outside support. This effectively turns orthodox theories underpinning central bank independence, fuelled by fears of fiscal dominance, on their head: what if it were not merely the case that policy activism undermines price stability, but also that some policy action is necessary to achieve it in the first place? To this end, we are starting to hear monetary policy-makers communicate to their audiences around the globe that there are a number of policy problems that they are not able to fully grasp on their own. These range from suggestions that the 'framework for understanding inflation dynamics could be misspecified in some fundamental way' (Yellen, 2017) or even of having to conduct 'monetary policy without a working theory of inflation' (Tarullo, 2017), to hopes for higher wage demands given that these are 'the primary driver of inflation' (Draghi, as quoted in Jones, 2017), to warnings of 'a host of issues [that] have been laid at the door of the Bank of England' which 'confuse independence with omnipotence' (Carney, 2017).

In this respect, and for all its alleged uniqueness, the ECB appears to find itself in a very similar situation compared to its counterparts in the developed world. The lessons we draw from the Eurozone can thus be instructive beyond Europe's monetary union, not least since we would expect questions of monetary-fiscal separation and cooperation to persist and even intensify as central banks around the globe begin to unwind unconventional policies in an attempt to confine themselves to more conventional interest rate-setting once again. For policy-makers keen on (re-)creating painstaking divisions between policy spheres, we would predict that this will only be achievable if central banks are not burdened with tasks and expectations they ultimately find themselves unable to fulfil on their own. For scholars of the political economy of central banking post-crisis, on the other hand, we suggest paying closer attention to central banks' entanglement with financial markets and how financial stability concerns condition an otherwise unnecessarily rigid understanding of independence as chiefly a matter of government-central bank relations. This challenges us to question the prevalent notion that central banks, although ‘discursively deeply enmeshed with’, are still taken to be ‘autonomous from markets’ (Nelson and Katzenstein, 2014, p. 383) – and to explore ways in which such autonomy can be theorised and ultimately achieved. An appreciation of financial dominance is a useful point of departure for this endeavour.

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Online Appendix

Textual data pre-processing steps

As is customary for QTA applications (Quinn *et al.*, 2010; Grimmer and Stewart, 2013), our corpus of texts had to be pre-processed before running the topic model algorithm. We first converted documents from the original HTML format into text files and removed encoding characters that resulted from conversion. We then eliminated non-alphabetical characters (such as punctuation, numbers, and currency symbols), stripped texts from a list of so-called 'stopwords' that do not add substantive meaning to a text (typically conjunctions, articles and pronouns), and grouped collocations where necessary (i.e. units of words with a distinctive meaning from their individual meanings) (McInnes, 2004). For example, the collocation '*euro*', '*area*' has been grouped into '*euro_area*'. We ranked likely collocations using the G^2 criterion proposed by McInnes (2004), merging the most likely 500 bi-grams. Lastly, we stemmed the obtained vocabulary, that is, reducing terms to their common roots (for example, the terms *inflation* and *inflationary* have been transformed into *inflat*), and removed terms occurring in fewer than 1% of the documents and more than 99% of the documents (in order to avoid extremely recurring terms to rank highly across all estimated topics, thereby blurring the analysis). For the most part, we have relied on the *quanteda* package developed for the R software environment (Benoit *et al.*, 2017), from which we also used the available list of English stopwords.

The LDA algorithm

The LDA algorithm assumes a generative model in order to estimate both topic content and prevalence, supposing that topics can be modelled as probability distributions over the vocabulary appearing in a text (Blei *et al.*, 2003; Blei, 2012). The method thus assumes that the probability of observing a word in a particular document is given by the prevalence of a particular topic in that document multiplied by the word's probability for a given topic (Griffiths and Steyvers, 2004).

In particular, this proceeds by fixing in advance a number of topics K. Further, let us define β_K as the probability distribution of each topic over the vocabulary in ECB communications, θ_d as the probability distribution of documents over topics (the vector of topic proportions), $z_{d,n}$ as the probability of a specific word belonging to a particular document, conditional on the topic proportions for that document, and $w_{d,n}$ as the probability that the same word belongs to a topic starting from initial topic assignment β_K. It follows that the probability of a word for a given topic can be seen as the probability of a given topic within a document $z_{d,n}$ multiplied by the probability of a given term in the overall topic distribution $w_{d,n}$. On the basis of the observed frequency of words for each document, it is possible to estimate the vector of topic proportions θ_d for that document. The algorithmic issue for LDA is to estimate likely values for each of the model parameters. For this, LDA assumes $w_{d,n}$ and $z_{d,n}$ to be drawn from two multinomial distributions and β_K and θ_d to be drawn from Dirichlet priors. We adopt the R implementation of the LDA estimation procedure written by Grün and Hornik (2011) to estimate the parameters in the ECB's communication data.

Two important caveats regarding the use of LDA are worth noting for our study. First, since the model derives topics from observed word frequencies only, it assumes that the order in which words appear is irrelevant for the overall meaning of a text (Fligstein *et al.*, 2017, p. 888). This assumption, also referred to as 'bag-of-words' (Grimmer and Stewart, 2013), does not allow distinguishing between positive and negative assessments of one and the same topic, for example (Mohr and Bogdanov, 2013). In consequence, some information contained in the original text may be lost when performing LDA. This is unlikely to be of substantial concern, however, if the aim of the analysis is to understand which themes a particular text is referring to (Hansen *et al.*, 2018), as is the case in the first part of our investigation. Nonetheless, we then also perform a qualitative assessment of ECB communication acts over the sample period in order to gain additional clarity on the direction of the central bank's fiscal statements.

Second, the number of topics K is assumed to be fixed and known in advance, i.e. it has to be inserted by the researcher. In practice, the specificity and substantive interpretability of the revealed topics are most often used for model selection (Blei, 2012; DiMaggio *et al*., 2013, pp. 78, 82; Fligstein *et al*. 2017, p. 889; Hansen *et al*., 2018, p. 820). In our case, after qualitative investigation of the output of models with topics ranging from 20 to 40, we select a model of $K = 25$ topics on the basis of interpretability. To increase our confidence in this selection, we also perform statistical measures of model fit. We use Asuncion *et al*.'s (2009) perplexity measure to compare the fit of models with K ranging from 5 to 100 topics. The results indicate highest fit is attained for topic numbers between 20 and 55, suggesting that a choice of 25 is appropriate. Moreover, the topic contents discussed in our analysis remain largely stable when altering the number of topics slightly in either direction. Table 1 below presents the topic contents (i.e. ten most probable terms per topic) for all 25 topics obtained through our LDA analysis, along with suggested topic labels.

Table 1: ECB communication topics, 2004-2015 (full table of LDA analysis with 25 topics)

Topic content	**Number**	**Suggested label**
regul market clear risk regulatori transpar need trade central will	1	*Regulation*
euro_area competit price econom countri euro_area_countri averag also differ increas	2	*Economic developments (competitiveness)*
econom polici monetari see monetary_polici inflat paper price model central_bank	3	*Monetary developments (inflation)*
statist data inform account euro_area european report financi use avail	4	*Statistics*
countri can economi growth effect invest firm also demand structur	5	*Economic developments (growth)*
bank will resolut european singl ssm fund supervis supervisori nation	6	*Banking union*
euro_area expect remain continu govern support will council medium_term loan	7	*Economic outlook*

fiscal euro_area govern countri debt reform deficit econom fiscal_polici implement	8	*Fiscal policy*
european europ union econom nation institut polit member state govern	9	*European Union*
payment sepa bank will european card servic scheme nation competit	10	*Payment services*
market integr financial_integr european cross border financi euro_area secur develop	11	*Financial integration*
risk financi macro financial_st prudenti financial_system polici framework can capit	12	*Financial risk*
supervisori institut central_bank financi bank european framework committe cooper level	13	*Prudential supervision*
growth product euro_area increas econom european employ economi labour develop	14	*Economic developments (productivity)*
bank risk financi credit market financ asset loan fund capit	15	*Credit developments*
crisi financi will time financial_crisi econom risk first economi dure	16	*Financial crisis*
remain growth price_st develop continu increas euro_area risk strong price	17	*Economic developments (impact of growth on prices)*
euro_area rate monetary_polici interest_r measur inflat effect polici will condit	18	*Monetary policy (interest rate decisions)*
monetary_polici central_bank price_st polici inflat monetari object time decis credibl	19	*Monetary policy (objectives)*
global countri globalis economi world increas import trade intern china	20	*Global trade*
currenc polici intern exchange_r monetari system countri reserv global domest	21	*Foreign reserves*
liquid market bank central_bank money_market oper eurosystem collater rate fund	22	*Money market*
euro countri member new converg state will euro_area adopt process	23	*Euro area*
can onli one even market make way may case problem	24	*General discussion 1*
central europa html media frankfurt will today veri european bank	25	*General discussion 2*

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Notes

[1] For an insightful discussion of the state of that literature, see Blinder *et al.* (2008).

[2] The first reference to financial dominance can be traced to Fraga *et al.* (2003), albeit in the context of emerging market economies' experiences with inflation-targeting regimes.

[3] Note Krippner's (2007) discussion of how central banks let financial markets ‘do the work’ for them, which, in turn, can give rise to the problem of markets' ‘infrastructural power’ (Braun, 2018).

[4] See, e.g., Bennani and Neuenkirch (2014, pp. 4-5) for an overview of different studies.

[5] We offer a more detailed discussion of the LDA algorithm, its assumptions and its caveats in the online appendix.

[6] Transcripts of press conferences, executive board member speeches and appearances in front of the EP are available from the ECB website (see https://www.ecb.europa.eu/press/key/speaker/bm/html/index.en.html). The latter include presentations of the ECB's annual report as well as the quarterly ‘monetary dialogue’ with the Economic and Monetary Affairs Committee.

[7] While the dataset is to some extent dominated by board members' speeches, the results remain broadly similar if speeches are excluded from the analysis. Results obtained from sub-samples of our data can be made available upon request.

[8] What may serve as a robustness check for our selection is that the topic content is in some ways congruent with the fiscal ‘vocabulary’ identified by Allard et al. (2013, p. 12), thus increasing our confidence in the algorithm. It also broadly corresponds to the fiscal policy topics obtained by Van der Veer and Haverland (2018) in their LDA analysis of a dataset of European Commission documents.

[9] ECB balance sheet data can be found at http://www.ecb.europa.eu/pub/annual/balance/html/index.en.html.

[10] Note that although the majority of asset purchases under the PSPP is undertaken by national central banks (in accordance with the ECB's capital key, at least in principle), the ECB conducts significant amounts of purchases itself as well – the value of which, at the time of writing, was more than ten times that of the securities bought under the SMP until the end of 2011 (see http://www.ecb.europa.eu/pub/annual/annual-accounts/html/index.en.html).